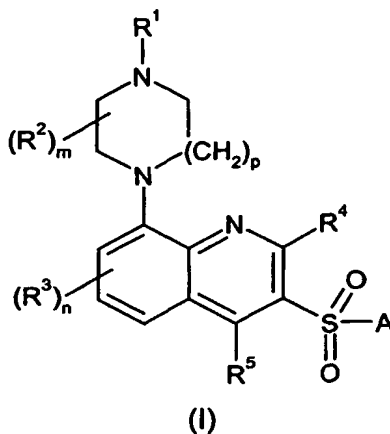


Claims:

1. A compound of formula (I) or a pharmaceutically acceptable salt thereof:



wherein:

R¹ and R² independently represent hydrogen or C₁₋₆ alkyl or R¹ is linked to R² to form a group (CH₂)₂, (CH₂)₃ or (CH₂)₄;

- 10 R³, R⁴ and R⁵ independently represent hydrogen, halogen, cyano, -CF₃, -CF₃O, C₁₋₆ alkyl, C₁₋₆ alkoxy, C₁₋₆ alkanoyl or a group -CONR⁶R⁷;

R⁶ and R⁷ independently represent hydrogen or C₁₋₆ alkyl or together may be fused to form a 5- to 7- membered aromatic or non-aromatic heterocyclic ring optionally interrupted by an O or S atom;

- 15 m represents an integer from 1 to 4, such that when m is an integer greater than 1, two R² groups may instead be linked to form a group CH₂, (CH₂)₂ or (CH₂)₃;

n represents an integer from 1 to 3;

p represents 1 or 2;

A represents a group -Ar¹ or -Ar²Ar³;

- 20 Ar¹, Ar² and Ar³ independently represent an aryl group or a heteroaryl group, both of which may be optionally substituted by one or more substituents which may be the same or different, and which are selected from the group consisting of halogen, hydroxy, cyano, nitro, trifluoromethyl, trifluoromethoxy, C₁₋₆ alkyl, trifluoromethanesulfonyloxy, pentafluoroethyl, C₁₋₆ alkoxy, arylC₁₋₆ alkoxy, C₁₋₆ alkylthio, C₁₋₆ alkoxyC₁₋₆ alkyl, C₃₋₇ cycloalkylC₁₋₆ alkoxy, C₁₋₆ alkanoyl, C₁₋₆ alkoxycarbonyl, C₁₋₆ alkylsulfonyl, C₁₋₆ alkylsulfinyl, C₁₋₆ alkylsulfonyloxy, C₁₋₆ alkylsulfonylC₁₋₆ alkyl, arylsulfonyl, arylsulfonyloxy, arylsulfonylC₁₋₆ alkyl, C₁₋₆ alkylsulfonamido, C₁₋₆ alkylamido, C₁₋₆ alkylsulfonamidoC₁₋₆ alkyl, C₁₋₆ alkylamidoC₁₋₆ alkyl, arylsulfonamido, arylcarboxamido, arylsulfonamidoC₁₋₆ alkyl, arylcarboxamidoC₁₋₆ alkyl, aroyl, aroylC₁₋₆ alkyl, arylC₁₋₆ alkanoyl, or a group
- 30 CONR⁸R⁹ or SO₂NR⁸R⁹, wherein R⁸ and R⁹ independently represent hydrogen or C₁₋₆ alkyl or together may be fused to form a 5- to 7- membered aromatic or non-aromatic heterocyclic ring optionally interrupted by an O or S atom; or solvates thereof.

2. A compound of formula (I) as defined in claim 1 wherein R^1 represents hydrogen, methyl, ethyl, isopropyl, isobutyl or 2,2-dimethylpropyl.
3. A compound of formula (I) as defined in claim 2 wherein R^1 represents hydrogen.
- 5 4. A compound of formula (I) as defined in any one of claims 1 to 3 wherein R^2 represents hydrogen, methyl or is linked to R^1 to form a $(CH_2)_3$ group.
- 10 5. A compound of formula (I) as defined in claim 4 wherein R^2 represents hydrogen.
6. A compound of formula (I) as defined in any one of claims 1 to 5 wherein R^3 represents hydrogen, methyl or halogen.
- 15 7. A compound of formula (I) as defined in claim 6 wherein R^3 represents hydrogen.
8. A compound of formula (I) as defined in any one of claims 1 to 7 wherein R^4 and R^5 independently represent hydrogen or methyl.
- 20 9. A compound of formula (I) as defined in claim 8 wherein R^4 and R^5 both represent hydrogen.
10. A compound of formula (I) as defined in any one of claims 1 to 9 wherein n represents 1.
- 25 11. A compound of formula (I) as defined in any one of claims 1 to 10 wherein m and p independently represent 1 or 2.
12. A compound of formula (I) as defined in claim 11 wherein m and p both represent 1.
- 30 13. A compound of formula (I) as defined in any one of claims 1 to 12 wherein A represents a group $-Ar^1$.
- 35 14. A compound of formula (I) as defined in claim 13 wherein Ar^1 represents phenyl optionally substituted with halogen, C_{1-6} alkyl, C_{1-6} alkoxy, trifluoromethyl or trifluoromethoxy.
- 40 15. A compound of formula (I) as defined in claim 13 or claim 14 wherein Ar^1 represents unsubstituted phenyl.
16. A compound of formula (I) according to claim 1 which is

- 8-(4-Methyl-piperazin-1-yl)-3-phenylsulfonylquinoline;
- 3-(2-Chloro)phenylsulfonyl-8-piperazin-1-yl-quinoline;
- 3-(3-Chloro)phenylsulfonyl-8-piperazin-1-yl-quinoline;
- 3-(2-Fluoro)phenylsulfonyl-8-piperazin-1-yl-quinoline;
- 5 3-(4-Chloro)phenylsulfonyl-8-piperazin-1-yl-quinoline;
- 3-(3-Fluoro)phenylsulfonyl-8-piperazin-1-yl-quinoline;
- 3-(4-Bromo-2-trifluoromethoxy)phenylsulfonyl-8-piperazin-1-yl-quinoline;
- 8-Piperazin-1-yl-3-(3-trifluoromethyl)phenylsulfonylquinoline;
- 7-Chloro-3-phenylsulfonyl-8-piperazin-1-yl-quinoline;
- 10 6-Methyl-3-phenylsulfonyl-8-piperazin-1-yl-quinoline;
- (R)-8-(3-Methyl)piperazin-1-yl-3-phenylsulfonylquinoline;
- (S)-8-(3-Methyl)piperazin-1-yl-3-phenylsulfonylquinoline;
- 8-Homopiperazin-1-yl-3-phenylsulfonylquinoline;
- 8-((S)-2-Methyl-piperazin-1-yl)-3-phenylsulfonyl-quinoline;
- 15 8-(4-Ethyl-piperazin-1-yl)-3-phenylsulfonylquinoline;
- 8-Piperazin-1-yl-3-(toluene-2-sulfonyl)-quinoline;
- 3-(2-Methoxy-benzenesulfonyl)-8-piperazin-1-yl-quinoline;
- 8-Piperazin-1-yl-3-(toluene-4-sulfonyl)-quinoline;
- 3-(4-Fluoro-benzenesulfonyl)-8-piperazin-1-yl-quinoline;
- 3-(2-Trifluoromethyl-benzenesulfonyl)-8-piperazin-1-yl-quinoline;
- 8-(4-Methyl-piperazin-1-yl)-3-(toluene-2-sulfonyl)-quinoline;
- 3-(2-Methoxy-benzenesulfonyl)-8-(4-methyl-piperazin-1-yl)-quinoline;
- 8-(4-Methyl-piperazin-1-yl)-3-(toluene-4-sulfonyl)-quinoline;
- 3-(4-Fluoro-benzenesulfonyl)-8-(4-methyl-piperazin-1-yl)-quinoline;
- 25 3-(3-Fluoro-benzenesulfonyl)-8-(4-methyl-piperazin-1-yl)-quinoline;
- 3-(2-Fluoro-benzenesulfonyl)-8-(4-methyl-piperazin-1-yl)-quinoline;
- 3-(4-Chloro-benzenesulfonyl)-8-(4-methyl-piperazin-1-yl)-quinoline;
- 3-(3-Chloro-benzenesulfonyl)-8-(4-methyl-piperazin-1-yl)-quinoline;
- 3-(2-Trifluoromethyl-benzenesulfonyl)-8-(4-methyl-piperazin-1-yl)-quinoline;
- 30 8-((S)-3-Methyl-piperazin-1-yl)-3-(toluene-2-sulfonyl)-quinoline;
- 3-(2-Methoxy-benzenesulfonyl)-8-((S)-3-methyl-piperazin-1-yl)-quinoline;
- 8-((S)-3-Methyl-piperazin-1-yl)-3-(toluene-4-sulfonyl)-quinoline;
- 3-(4-Fluoro-benzenesulfonyl)-8-((S)-3-methyl-piperazin-1-yl)-quinoline;
- 3-(3-Fluoro-benzenesulfonyl)-8-((S)-3-methyl-piperazin-1-yl)-quinoline;
- 35 3-(2-Fluoro-benzenesulfonyl)-8-((S)-3-methyl-piperazin-1-yl)-quinoline;
- 3-(4-Chloro-benzenesulfonyl)-8-((S)-3-methyl-piperazin-1-yl)-quinoline;
- 3-(3-Chloro-benzenesulfonyl)-8-((S)-3-methyl-piperazin-1-yl)-quinoline;
- 3-(3-Trifluoromethyl-benzenesulfonyl)-8-((S)-3-methyl-piperazin-1-yl)-quinoline;
- 3-Benzenesulfonyl-8-((R)-2-methyl-piperazin-1-yl)-quinoline;
- 40 3-Benzenesulfonyl-8-((2R,5S)-2,5-dimethyl-piperazin-1-yl)-quinoline racemate;
- 3-Benzenesulfonyl-8-(3,3-dimethyl-piperazin-1-yl)-quinoline;
- 3-Benzenesulfonyl-8-(hexahydro-pyrrolo[1,2-a]pyrazin-2-yl)-quinoline racemate;

3-Benzenesulfonyl-8-(4-isopropyl-piperazin-1-yl)-quinoline;
 3-Benzenesulfonyl-8-(4-isobutyl-piperazin-1-yl)-quinoline;
 3-Benzenesulfonyl-8-[4-(2,2-dimethyl-propyl)-piperazin-1-yl]-quinoline;
 3-Benzenesulfonyl-8-((R)-3,4-dimethyl-piperazin-1-yl)-quinoline;
 5 3-Benzenesulfonyl-8-((S)-3,4-dimethyl-piperazin-1-yl)-quinoline;
 3-Phenylsulfonyl 8-({1S, 4S} 2,5-diazabicycloheptan-2-yl) quinoline;
 or a pharmaceutically acceptable salt thereof.

17. A compound of formula (I) according to claim 1 which is 3-phenylsulfonyl-8-
 10 piperazin-1-yl-quinoline or a pharmaceutically acceptable salt thereof.

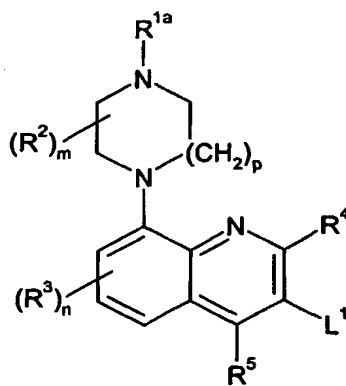
18. A compound of formula (I) according to claim 17 which is the free base of 3-phenylsulfonyl-8-piperazin-1-yl-quinoline.

15 19. A compound of formula (I) according to claim 18 which is 3-phenylsulfonyl-8-piperazin-1-yl-quinoline (Form I).

20. A compound of formula (I) according to claim 18 which is 3-phenylsulfonyl-8-piperazin-1-yl-quinoline (Form II).

20 21. A process for the preparation of a compound of formula (I) as defined in any one of claims 1 to 20 or a pharmaceutically acceptable salt thereof, which comprises:

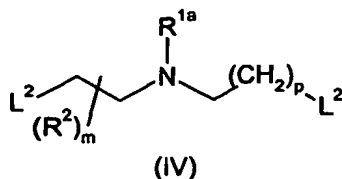
25 (a) reacting a compound of formula (II)



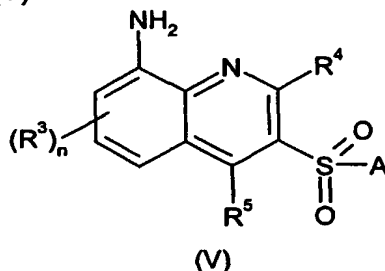
(II)

wherein R^{1a} is as defined for R¹ in claim 1 or an N-protecting group, R², R³, R⁴, R⁵, m, n and p are as defined in claim 1 and L¹ is a leaving group;
 30 with a compound of formula A-SO₂H, (or A-SH followed by a subsequent oxidation step) wherein A is as defined above and thereafter as necessary removing an R^{1a} N-protecting group; or

(b) reacting a compound of formula (IV)

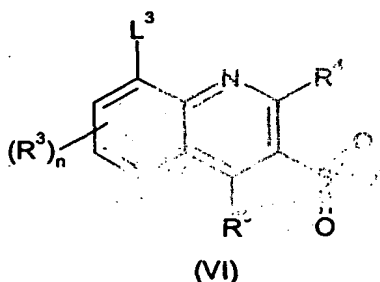


with a compound of formula (V)



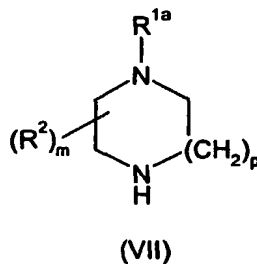
wherein R^{1a}, R², R³, R⁴, R⁵, A, m, n and p are as defined in claim 1, and L² represents a
 5 suitable leaving group, and thereafter as necessary removing an R^{1a} N-protecting group;
 or

(c) reacting a compound of formula (VI)



10

with a compound of formula (VII)



15

wherein R^{1a}, R², R³, R⁴, R⁵, m, n, p and A are as defined in claim 1 and L³ represents a
 suitable leaving group, and thereafter as necessary removing an R^{1a} N-protecting group;
 or

(d) deprotecting a compound of formula (I) which is protected; and thereafter
 optionally

20

(e) interconversion to other compounds of formula (I) and/or forming a
 pharmaceutically acceptable salt and/or solvate.

22. A pharmaceutical composition which comprises a compound according to any one of claims 1 to 20 and a pharmaceutically acceptable carrier or excipient.

5 23. A compound according to any one of claims 1 to 20 for use in therapy.

24. A compound according to any one of claims 1 to 20 for use in the treatment of depression, anxiety, Alzheimers disease, age related cognitive decline, ADHD, obesity, mild cognitive impairment, schizophrenia, cognitive deficits in schizophrenia and stroke.

10

25. The use of a compound of formula (I) as defined in any one of claims 1 to 20 or a pharmaceutically acceptable salt thereof in the manufacture of a medicament for the treatment or prophylaxis of depression, anxiety, Alzheimers disease, age related cognitive decline, ADHD, obesity, mild cognitive impairment, schizophrenia, cognitive deficits in schizophrenia and stroke.

15

26. A pharmaceutical composition comprising a compound of formula (I) as defined in any one of claims 1 to 20 for use in the treatment of depression, anxiety, Alzheimers disease, age related cognitive decline, ADHD, obesity, mild cognitive impairment, schizophrenia, cognitive deficits in schizophrenia and stroke.

20

27. A method of treating depression, anxiety, Alzheimers disease, age related cognitive decline, ADHD, obesity, mild cognitive impairment, schizophrenia, cognitive deficits in schizophrenia and stroke which comprises administering a safe and therapeutically effective amount to a patient in need thereof of a compound of formula (I) as defined in any one of claims 1 to 20 or a pharmaceutically acceptable salt thereof.

25

28. A method of promoting neuronal growth within the central nervous system of a mammal which comprises the step of administering a compound of formula (I) as defined in any one of claims 1 to 20 or a pharmaceutically acceptable salt thereof.

30

29. Use of a compound of formula (I) as defined in any one of claims 1 to 20 in the manufacture of a medicament for promoting neuronal growth within the central nervous system of a mammal

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30. A pharmaceutical composition comprising a compound of formula (I) as defined in any one of claims 1 to 20 for use in promoting neuronal growth within the central nervous system of a mammal.

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